

WHAT IS CLAIMED

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1. A biocompatible resorbable, lubricous
carrier for suspending a biomaterial in a tissue
augmentation material, comprising a polysaccharide
gel having a viscosity greater than 200,000 to about
5 350,000 centipoise, wherein the polysaccharide gel
maintains the biomaterial homogeneously suspended in
the tissue augmentation material prior to
augmentation of a desired tissue site and during
introduction of the tissue augmentation material to
10 the desired site.

2. The carrier according to Claim 1, wherein
the polysaccharide gel is an aqueous polysaccharide
gel.

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3. The carrier according to Claim 1, wherein
the polysaccharide gel comprises a polysaccharide
selected from the group consisting of a cellulose
polysaccharide, starch, chitin, chitosan, hyaluronic
5 acid, hydrophobe modified polysaccharide, an
alginate a carrageenan, agar, agarose, an
intramolecular complex of a polysaccharide, an
oligosaccharide and a macrocyclic polysaccharide.

4. The carrier according to Claim 3, wherein
the polysaccharide gel comprises a cellulose
polysaccharide.

5. The carrier according to Claim 4, wherein
the cellulose polysaccharide is selected from the
group consisting of sodium carboxymethylcellulose,

agar methylcellulose, hydroxypropyl methylcellulose, ethylcellulose, microcrystalline cellulose and oxidized cellulose.

6. The carrier according to Claim 5, wherein the cellulose polysaccharide is sodium carboxymethylcellulose.

7. The carrier according to Claim 1, wherein the polysaccharide gel comprises a solvent selected from the group consisting of water and aqueous alcohol.

8. The carrier according to Claim 7, wherein the aqueous alcohol is selected from the group consisting of aqueous glycerol, aqueous isopropyl alcohol, aqueous ethanol, aqueous ethylene glycol
5 and mixtures thereof.

9. The carrier according to Claim 2, further comprising glycerin.

10. The carrier according to Claim 9, wherein water and the glycerin are present in the aqueous polysaccharide gel in a ratio of from about 20 to 90:80 to 10.

11. The carrier according to Claim 10, wherein the water and the glycerin are present in the gel in a ratio of about 85:15.

12. The carrier according to Claim 1, wherein the biomaterial is selected from the group consisting of a ceramic, a plastic and a metal.

13. The carrier according to claim 12, wherein the biomaterial is a ceramic.

14. The carrier according to Claim 13, wherein the ceramic comprises rounded, substantially spherical, biocompatible, substantially non-resorbable, finely divided ceramic particles.

15. The carrier according to Claim 14, wherein the ceramic particles are selected from the group consisting of calcium phosphate particles, calcium silicate particles, calcium carbonate particles and
5 alumina particles.

16. The carrier according to Claim 15, wherein the ceramic particles are calcium phosphate particles.

17. The carrier according to Claim 16, wherein the calcium phosphate particles are selected from the group consisting of calcium hydroxyapatite particles, tetracalcium phosphate particles, calcium
5 pyrophosphate particles, tricalcium phosphate particles, octacalcium phosphate particles, calcium fluorapatite particles, calcium carbonate apatite particles and mixtures thereof.

18. The carrier according to Claim 17, wherein the calcium phosphate particles are calcium hydroxyapatite particles.

19. The carrier according to Claim 1, wherein the desired tissue site is an osseous site.

20. The carrier according to Claim 19, wherein the desired tissue site is an osseous site in a state of osteoporosis.

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5 21. A biocompatible composition for augmenting tissue, comprising a biomaterial for augmenting a desired tissue site and a biocompatible, resorbable, lubricous carrier for the biomaterial, the carrier comprising a polysaccharide gel having a viscosity greater than 200,000 to about 350,000 centipoise, wherein the carrier maintains the biomaterial homogeneously suspended in the biocompatible composition prior to augmentation of a desired
10 tissue site and during introduction of the biocompatible composition to the desired site.

22. The composition according to Claim 21, wherein the polysaccharide gel is an aqueous polysaccharide gel.

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5 23. The composition according to Claim 21, wherein the polysaccharide gel comprises a polysaccharide selected from the group consisting of a cellulose polysaccharide, starch, chitin, chitosan, hyaluronic acid, hydrophobe modified

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Cont.

~~polysaccharide, an alginate a carrageenan, agar, agarose, an intramolecular complex of a polysaccharide, an obigosaccharide and a macrocyclic polysaccharide.~~

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24. The composition according to Claim 23, wherein the polysaccharide gel comprises a cellulose polysaccharide.

25. The composition according to Claim 24, wherein the cellulose polysaccharide is selected from the group consisting of sodium carboxymethylcellulose, agar methylcellulose, 5 hydroxypropyl methylcellulose, ethylcellulose, microcrystalline cellulose and oxidized cellulose.

26. The composition according to Claim 25, wherein the cellulose polysaccharide is sodium carboxymethylcellulose.

27. The composition according to Claim 21, wherein the polysaccharide gel comprises a solvent selected from the group consisting of water and aqueous alcohol.

28. The composition according to Claim 27, wherein the aqueous alcohol is selected from the group consisting of aqueous glycerol, aqueous isopropyl alcohol, aqueous ethanol, aqueous ethylene 5 glycol and mixtures thereof.

29. The composition according to Claim 22, further comprising glycerin.

30. The composition according to Claim 29, wherein water and the glycerin are present in the aqueous polysaccharide gel in a ratio of from about 20 to 90:80 to 10.

31. The composition according to Claim 30, wherein the water and glycerin are present in the aqueous polysaccharide gel in a ratio of about 85:15.

32. The composition according to Claim 21, wherein the biomaterial is selected from the group consisting of a ceramic, a plastic and a metal.

33. The composition according to Claim 32, wherein the biomaterial is a ceramic.

34. The composition according to Claim 33, wherein the ceramic comprises rounded, substantially spherical, biocompatible, substantially non-resorbable, finely divided ceramic particles.

35. The composition according to Claim 34, wherein the ceramic particles are selected from the group consisting of calcium phosphate particles, calcium silicate particles, calcium carbonate
5 particles and alumina particles.

36. The composition according to Claim 35, wherein the ceramic particles are calcium phosphate particles.

37. The composition according to Claim 36, wherein the calcium phosphate particles are selected from the group consisting of calcium hydroxyapatite particles, tetracalcium phosphate particles, calcium pyrophosphate particles, tricalcium phosphate particles, octacalcium phosphate particles, calcium fluorapatite particles, calcium carbonate apatite particles and mixtures thereof.

38. The composition according to Claim 37, wherein the calcium phosphate particles are calcium hydroxyapatite particles.

39. The composition according to Claim 21, wherein the desired tissue site is an osseous site.

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DI 40. The composition according to Claim 40, wherein the desired tissue site is an osseous site in a state of osteoporosis.

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B3 5 41. In a biocompatible composition for augmenting tissue, the biocompatible composition comprising a biomaterial for augmenting a desired tissue site and a biocompatible, resorbable, lubricous carrier for the biomaterial, the improvement comprising a polysaccharide gel carrier, having a viscosity greater than 200,000 to about 350,000 centipoise, the carrier maintaining the

biomaterial homogeneously suspended in the biocompatible composition prior to augmentation of a desired tissue site and during introduction of the biocompatible composition to the desired site.

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Sub B2 42. A substantially dehydrated biocompatible composition, comprising a biomaterial for augmenting a desired tissue site and a dehydrated, biocompatible, resorbable, suspending medium for the biomaterial, the suspending medium comprising a dehydrated polysaccharide gel for maintaining the biomaterial suspended in the implant composition.

43. The composition according to Claim 42, wherein the composition is shaped into a preform for implantation into a desired tissue site.

44. The composition according to Claim 42, wherein the polysaccharide gel comprises a polysaccharide selected from the group consisting of a cellulose polysaccharide, starch, chitin, chitosan, hyaluronic acid, hydrophobe modified polysaccharide, an alginate, a carrageenan, agar, agarose, an intramolecular complex of a polysaccharide, an oligosaccharide and a macrocyclic polysaccharide.

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45. The composition according to Claim 44, wherein the polysaccharide gel comprises a cellulose polysaccharide.

46. The composition according to Claim 45,
wherein the cellulose polysaccharide is selected
from the group consisting of sodium
carboxymethylcellulose, agar methylcellulose,
5 hydroxypropyl methylcellulose, ethylcellulose,
microcrystalline cellulose and oxidized cellulose.

47. The composition according to Claim 46,
wherein the cellulose polysaccharide is sodium
carboxymethylcellulose.

48. The composition according to Claim 42,
wherein the biomaterial is selected from the group
consisting of a ceramic, a plastic and a metal.

49. The composition according to Claim 48,
wherein the biomaterial is a ceramic.

50. The composition according to Claim 49,
wherein the ceramic comprises rounded, substantially
spherical, biocompatible, substantially non-
resorbable, finely divided ceramic particles.

51. The composition according to Claim 50,
wherein the ceramic particles are selected from the
group consisting of calcium phosphate particles,
calcium silicate particles, calcium carbonate
5 particles and alumina particles.

52. The composition according to Claim 51,
wherein the ceramic particles are calcium phosphate
particles.

53. The composition according to Claim 52, wherein the calcium phosphate particles are selected from the group consisting of calcium hydroxyapatite particles, tetracalcium phosphate particles, calcium
5 pyrophosphate particles, tricalcium phosphate particles, octacalcium phosphate particles, calcium fluorapatite particles, calcium carbonate apatite particles and mixtures thereof.

54. The composition according to Claim 53, wherein the calcium phosphate particles are calcium hydroxyapatite particles.

55. A method of making a substantially dehydrated biocompatible composition for implantation into a desired tissue site, comprising the step of drying a biocompatible composition
5 comprising a biomaterial for augmenting a desired tissue site and a biocompatible, resorable, lubricious carrier for the biomaterial, the carrier comprising a polysaccharide gel having a viscosity of from about 20,000 to about 350,000.

10 ~~Sub D3~~ 56. The method according to Claim 55, further comprising the step of shaping the substantially dehydrated biocompatible composition into a preform for implantation into the desired tissue site.

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